

# Geothermal Energy Project Brief

California Energy Commission

June 2002

## Surprise Valley Geothermal Heating Systems

### PURPOSE

Provide space heating and domestic hot water to the Surprise Valley High School, Elementary School and Hospital/Clinic, in Cedarville, Modoc County, California, using geothermal resources.

### FUNDING AND OWNERSHIP

Private individuals own the two geothermal production wells. The schools and hospital purchased the rights to the resource and pay the on-going pumping and maintenance fees. The supply and disposal pipelines are owned and maintained by the schools and hospital.

The California Energy Commission provided co-funding for construction.

CEC Awards to Surprise Valley Joint Unified School District	\$208,648
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CEC Awards to Surprise Valley Hospital District	\$224,067
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Match Funds, Surprise Valley Joint Unified School District	\$ 30,234
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Match Funds, Surprise Valley Hospital District	\$ 41,525
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<b>Total</b>	<b>\$504,474</b>
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### GEOHERMAL RESOURCE AND SYSTEM DESIGN

The Surprise Valley Geothermal System came online in 1984. The system includes two pumped wells that supply fluids at about 128 degrees F. The first well serves the high school and the second serves the elementary school, hospital and clinic. The high school's well is 1860 feet deep, while the second well is 1150 feet. The high school uses a maximum flow of 40 gallons per minute (GPM), and the elementary school, hospital and clinic use a maximum of 25 GPM.

The system includes about 4 miles of pipeline. The exceptionally clean fluids from the high school are discharged into an irrigation ditch; those from the other well are discharged to an old mill site where they are used to create wildlife ponds.

In 1994, the elementary and high schools were remodeled through a State School Modernization grant. Heat exchangers were installed at that time and temperature controllers placed in each room. The geothermal systems require only modest maintenance.

There are no concerns about resource depletion and no plans to expand the systems since the community has a declining population.

### SAVINGS AND PAYBACK PERIOD

Based on 1993 fuel data, connected facilities realize annual savings of approximately \$50,000.



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